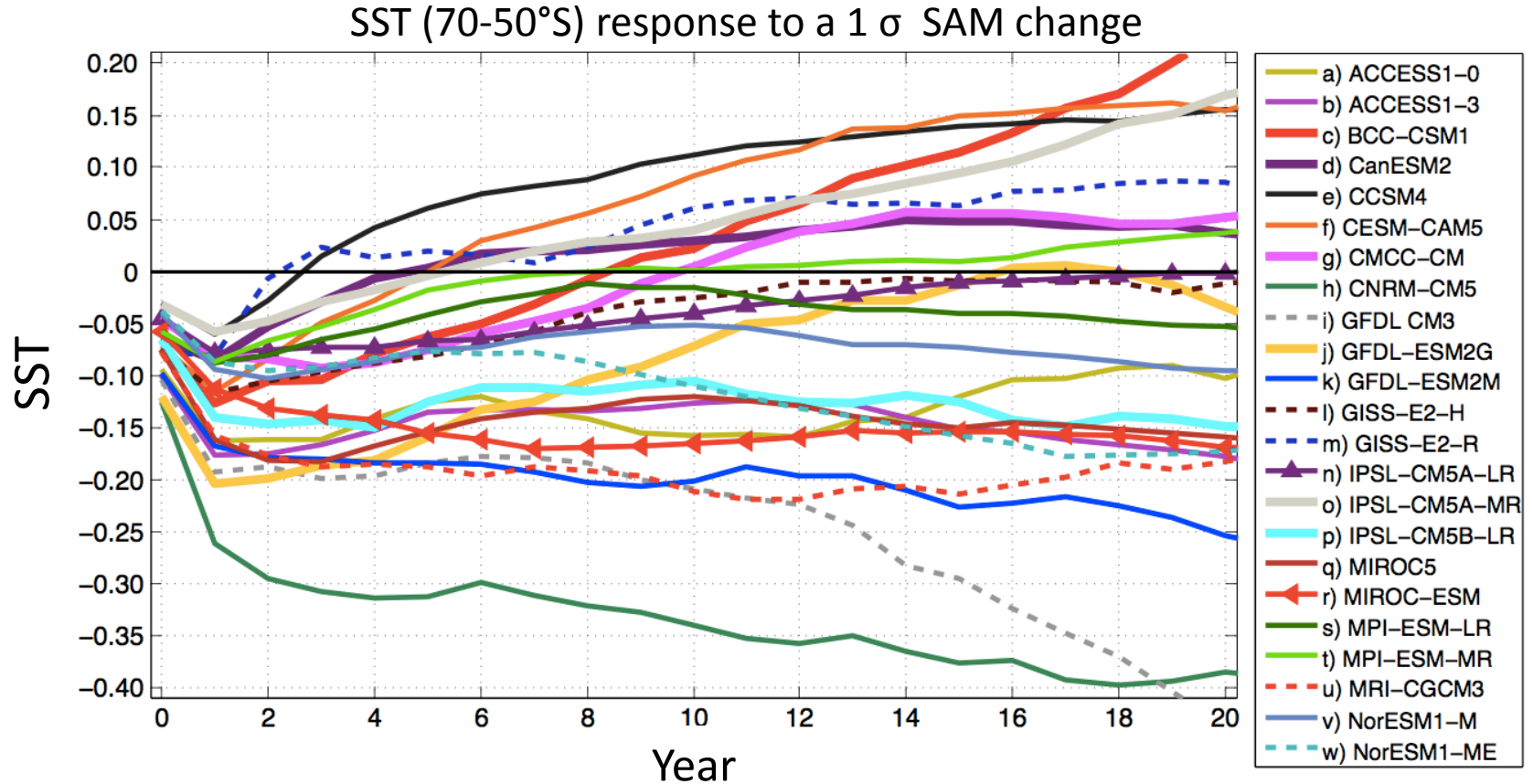


# Southern Ocean transient response to wind changes

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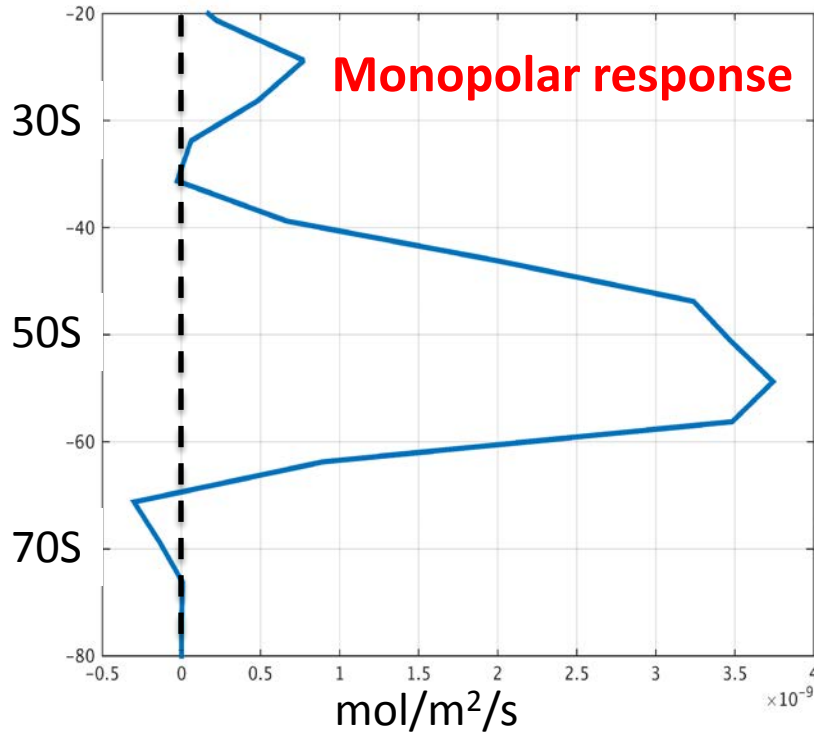
→ Problematic for prediction/attribution studies on interannual to decadal timescales

→ Mean simulated state is *essential*

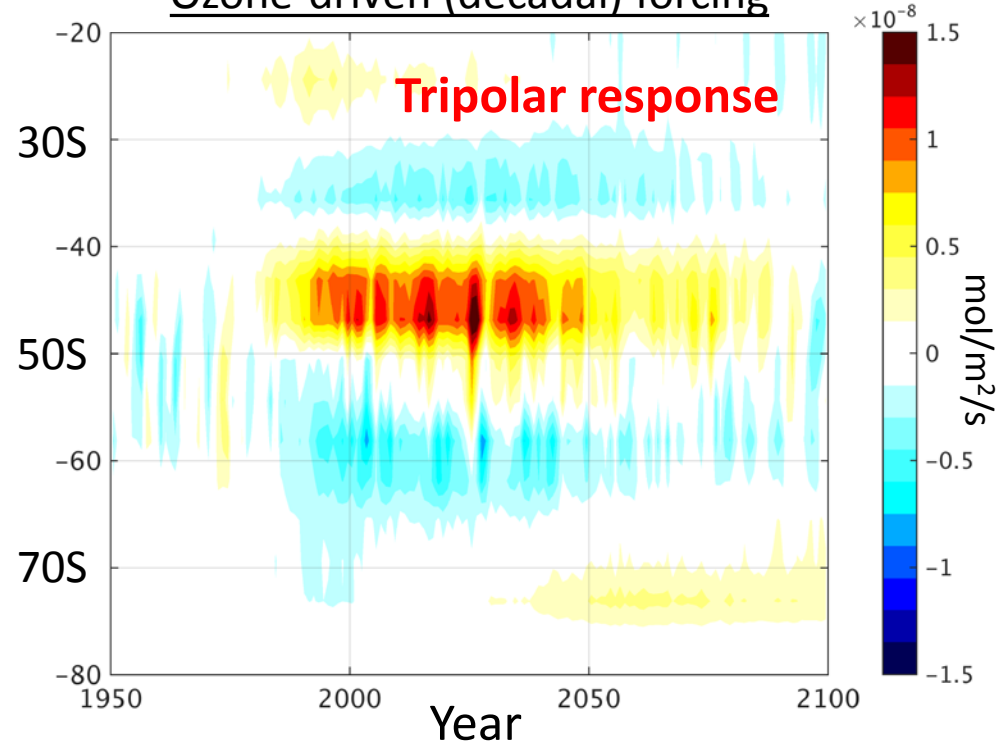
# Implications for carbon cycle

## Surface CO<sub>2</sub> flux anomaly

### High-frequency wind forcing



### Ozone-driven (decadal) forcing



- Combination of the multiple ocean times and carbon chemistry
- Which response is observed?

Attribution/prediction SO CO<sub>2</sub> sink:

good estimates of real ocean timescales + representation in climate models